



Science

Prep.3

Second Term

Final Revision



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موقع مذكرات جاهزة للطباعة



Final Revision

Mr. Ahmed Elbasha

★ (1) Write the scientific term:

- 1) The opposition that the electric current faces during its passage through a conductor. (.....)
- 2) Organs secrete hormones directly in the blood stream. (.....)
- 3) The charge transferred by a constant current of intensity one ampere in one second. (.....)
- 4) It is a reaction where double substitution occurs between the ions of two compounds to form two new compounds. (.....)
- 5) The flow of electric negative charges through conducting material. (.....)
- 6) The trait that appears in all individuals of the first generation in Mendel's experiments. (.....)
- 7) Organs secrete hormones directly into blood stream. (.....)
- 8) The quantity of electricity in coulomb that flows through a cross section of a conductor in one second. (.....)
- 9) The hormone that controls the speed rate of muscles and bones growth. (.....)
- 10) The substance which loses one or more electrons in a chemical reaction. (.....)
- 11) A chemical substance that controls and organizes most of the vital activities and functions. (.....)
- 12) The type of the chemical reaction which involves the breaking up of the compound into simple elements by the effect of heat (.....)
- 13) The process of spontaneous decaying of atoms nuclei of some radioactive elements that are present in nature. (.....)
- 14) The electric current that is produced from convert mechanical energy into electric energy by means of the dynamo. (.....)
- 15) They are parts of DNA on the chromosomes and control the hereditary traits of the individual. (.....)
- 16) The measuring unit of the absorbed radiation. (.....)

- 17) The result when one of the endocrine glands does not work properly. (.....)
- 18) Chemical compound which is resulted from the reaction of acid with alkali. (.....)
- 19) The breaking up of bonds in molecules of the reactants and formation of new bonds in the molecules of resultants (products). (.....)
- 20) The change in the concentration of the reactants and resultants at a unit time. (.....)
- 21) The resistance of a conductor that allows the Passing of an electric current of 1 ampere when the potential difference between its two ends is 1 volt. (.....)
- 22) Hormone is responsible for female secondary sex character. (.....)
- 23) The state of a conductor that determines the transfer of electricity from or to it. (.....)
- 24) The change in the concentration of the reactants and products per unit time. (.....)
- 25) A chemical process in which the atom loses an electron or more. (.....)
- 26) A chemical substance controls and organizes most of vital activities and functions of the living organism. (.....)
- 27) The individual who carries two identical factors for the dominant or the recessive trait. (.....)
- 28) A device used to raise or reduce voltage of the home electric equipment. (.....)
- 29) An arrangement of the metals in a descending order according to their chemical activity. (.....)
- 30) The breaking up of bonds in reactant molecules and the formation of new bonds in the products molecules. (.....)
- 31) The spontaneous decaying of the atom's nuclei of some elements that are present in nature in an attempt to achieve more stable composition . (.....)
- 32) The resistance of conductor that allows the passing of an electric current of [1 ampere] through it when the potential difference across its ends is [1 volt]. (.....)
- 33) The traits that are not transmitted from one generation to another. (.....)
- 34) The charge transferred by a constant current of intensity one ampere in one second (.....)

- 35) The potential difference across two terminals of a conductor on doing a work of one joule to transfer a quantity of electricity of one coulomb. (.....)
- 36) The arrangement of metals in a descending order according to the degree of their chemical activity. (.....)
- 37) The natural decay of the atoms of some elements in nature as an attempt to reach more stable composition. (.....)
- 38) It is chemically consisting of a nucleic acid called DNA combined with protein (.....)
- 39) The substance which increases the speed of the chemical reaction without interfering in it or being consumed. (.....)
- 40) Parts of DNA that are present on the chromosomes. (.....)
- 41) The trait that appears in all individuals of the first generation in Mendel's experiment. (.....)
- 42) The reaction of acid and alkali to give salt and water. (.....)
- 43) The resistance of conductor, the current intensity passing through it is (1 Ampere) when the potential difference between its terminals is (1 volt). (.....)
- 44) The change in the concentration of reactants and products at a unit of time. (.....)
- 45) The substance which loses an electron or more during the chemical reaction. (.....)
- 46) Chemical substances that controls and organizes most of the functions in the living organisms bodies. (.....)
- 47) The opposition that the electric current faces during its passage through a conductor. (.....)
- 48) It is a reaction where double substitution occurs between the ions of two compounds to form two new compounds. (.....)
- 49) The flow of electric negative charges through conducting material. (.....)
- 50) The trait that appears in all individuals of the first generation in Mendel's experiments. (.....)
- 51) The quantity of electricity in coulomb that flows through a cross section of a conductor in one second. (.....)
- 52) The substance which loses one or more electrons in a chemical reaction. (.....)
- 53) The measuring unit of the absorbed radiation. (.....)

- 54) Chemical compound which is resulted from the reaction of acid with alkali. (.....)
-
- 55) The breaking up of bonds in molecules of the reactants and formation of new bonds in the molecules of resultants (products). (.....)
-
- 56) The state of a conductor that determines the transfer of electricity from or to it. (.....)
-
- 57) A chemical process in which the atom loses an electron or more. (.....)
-
- 58) The electric current intensity passing through conductor is directly proportional with potential difference between its ends when the temperature is constant. (.....)
-
- 59) It is the value of work done to transfer a quantity of electric charges of (one coulomb) between the poles of the conductor. (.....)
-
- 60) It is a chemical substance (or a chemical message) that controls and organizes most of vital activities and functions in the bodies of living organisms. (.....)
-
- 61) The traits that are not transmitted from one generation to another. (.....)
-
- 62) A device that is used to measure the electromotive force (.....)
-
- 63) Its chemical structure is DNA with protein.
-
- 64) The potential difference between two poles of the electric source when the electric circuit is opened.
-
- 65) The material which increases the speed of reaction without being changed.
-
- 66) The quantity of charge transferred by a fixed current 1 ampere per a second.
-
- 67) The genetic map of genes in human chromosomes.
-
- 68) The changes that appear on a living organism as a result of exposure to radiation.
-
- 69) An enzyme that is found in sweet potato and helps in decomposition of hydrogen peroxide.
-
- 70) The state of an electric conductor that shows the transfer of the electricity from or to it, when it is connected to another conductor.
-
- 71) It is chemically consisted of a nucleic acid called DNA binds with protein.

★(2) Choose the right answer :

1. The hormone liberates the energy necessary for the body from food.

- | | | | |
|-----------|-------------|-------------|-------------|
| a. growth | b. estrogen | c. thyroxin | d. glucagon |
|-----------|-------------|-------------|-------------|

2. The two factors of a hereditary trait are similar in the individual.

- | | | | |
|---------|-----------|--------------|---------------------|
| a. pure | b. hybrid | c. recessive | d. pure & recessive |
|---------|-----------|--------------|---------------------|

3. The most active metal in the chemical activity series is

- | | | | |
|------------|------------|--------------|--------------|
| a. copper. | b. sodium. | c. hydrogen. | d. aluminum. |
|------------|------------|--------------|--------------|

4. The is used to control the resistance in the electric circuit.

- | | | | |
|-------------|------------|--------------|-------------|
| a. rheostat | b. ammeter | c. voltmeter | d. ohmmeter |
|-------------|------------|--------------|-------------|

5. To control the value of electric resistance in the electric circuit we use instrument.

- | | | |
|-------------|-------------|--------------|
| a. ohmmeter | b. rheostat | c. voltmeter |
|-------------|-------------|--------------|

6. The is chemically composed of the nucleic acid DNA combined with protein.

- | | | |
|--------------|---------|---------------|
| a. cytoplasm | b. gene | c. chromosome |
|--------------|---------|---------------|

7. Thermal decomposition of copper carbonate gives

- | | |
|----------------------------------|-------------------------------|
| a. copper+ water. | b. copper+ carbon dioxide. |
| c. copper oxide+ carbon dioxide. | d. copper oxide+ water vapor. |

8. From the examples of electrochemical cells

- | | | | |
|--------------|------------|--------------|--------------|
| a. dry cell. | b. dynamo. | c. rheostat. | d. ohmmeter. |
|--------------|------------|--------------|--------------|

9. From dominant traits in the human being are

- | | |
|----------------|-------------------------|
| a. smooth hair | b. wide eye |
| c. no dimples | d. presence of freckles |

10. The active metal can replace the hydrogen of water which rises and produces

- | | |
|---------------------|--------------------|
| a. metal hydroxide. | b. metal oxide. |
| c. metal carbonate. | d. metal sulphate. |

11. At the beginning of the reaction, percentage of reactants concentration equals

- | | | | |
|---------|--------|-------|-----------------------|
| a. 100% | b. 50% | c. 0% | d. no correct answer. |
|---------|--------|-------|-----------------------|

12.It is chemically composed of the nucleus acid DNA combined with protein

- | | | | |
|---------------|----------------|----------|-------------|
| a. cytoplasm. | b. chromosome. | c. gene. | d. nucleus. |
|---------------|----------------|----------|-------------|

13..... is a non-radioactive element.

- | | | | |
|-----------|------------|--------------|---------|
| a. Radium | b. Uranium | c. Zirconium | d. Iron |
|-----------|------------|--------------|---------|

14.All of the following are aims of the human genome project except.....

- | |
|---|
| a. obtaining desirable traits. |
| b. understanding the human biology. |
| c. discovering all of the human genes. |
| d. identifying the single differences between one person and another. |

15.The Sliding Rheostat is used to in the electric circuit.

- | | |
|----------------------------------|-------------------------------------|
| a. measure the current intensity | b. measure the potential difference |
| c. change the resistance | d. measure the electromotive force |

16.The hormone which regulates the calcium level in the blood is

- | | | | |
|---------------|-------------|------------|--------------|
| a. calcitonin | b. thyroxin | c. insulin | d. adrenalin |
|---------------|-------------|------------|--------------|

17.If an electric current of 0 .2 ampere passes in an electric heater and the potential difference between its two ends is 220 volts, the heater's resistance is Ohm

- | | | | |
|-------|---------|---------|---------|
| a. 20 | b. 1100 | c. 2200 | d. 1000 |
|-------|---------|---------|---------|

18.The measuring unit of the electric current intensity is

- | | | |
|---------|------------|--------------------|
| a. ohm. | b. ampere. | c. volt. .coulomb. |
|---------|------------|--------------------|

19.White sodium nitrates decompose by heat into and oxygen.

- | | | | |
|-------------------|-------------|-----------------|------------|
| a. sodium nitrite | b. nitrogen | c. sodium oxide | d. ammonia |
|-------------------|-------------|-----------------|------------|

20.The reaction of oil with caustic soda is considered as reaction

- | | |
|--------------------------|-------------------------|
| a. relatively fast. | b. relatively slower. |
| c. takes several months. | d. takes several years. |

21.The quantity of electricity passes in conductor due to passing of electric current with intensity 2 amperes through time 20 minutes is coulomb.

- | | | | |
|-------|-------|-------|-----------|
| a. 10 | b. 20 | c. 40 | d .. 2400 |
|-------|-------|-------|-----------|

22..... is used to measure electric resistance of conductor.

- | | | | |
|------------|-------------|--------------|-------------|
| a. Ammeter | b. Ohmmeter | c. Voltmeter | d. Rheostat |
|------------|-------------|--------------|-------------|

23..... is the hormone appears the male secondary sex characteristics .

- | | | | |
|------------|-------------|-------------------|-----------------|
| a. Insulin | b. Estrogen | c. . Testosterone | d. Progesterone |
|------------|-------------|-------------------|-----------------|

24.The apparatus is used for measuring the electric current intensity.

- | | | | |
|-------------|--------------|------------|-------------|
| a. ohmmeter | b. voltmeter | c. ammeter | d. rheostat |
|-------------|--------------|------------|-------------|

25.All of the following are factors affecting in the rate of chemical reaction expect

- | | |
|------------------------------------|-------------------------------------|
| a. the concentration of reactants. | b. the nature of reactant. |
| c. the nature of products. | d. the temperature of the reaction. |

26.Clear lime water turbid on passing gas through it.

- | | |
|---------------------|--------------------------|
| a. nitrogen dioxide | b. sulphur dioxide |
| c. carbon dioxide | d. (a and b) are correct |

27.Alternating current is characterized by

- | | |
|--------------------------------------|------------------------|
| a. constant intensity. | b. variable direction. |
| c. variable intensity and direction. | d. variable intensity. |

28.According to Mendel's second law, The recessive trait appears in the second generation by a ratio of

- | | | | |
|---------|----------|---------|---------|
| a. 50 % | b. 100 % | c. 75 % | d. 25 % |
|---------|----------|---------|---------|

29.The neutralization reaction occurs between

- | | |
|-------------------------|--------------------|
| a. metal and non-metal. | b. acid and salt. |
| c. copper and carbon. | d. acid and alkali |

30.All the following units measuring the current intensity except

- | | | | |
|------------|----------------------|---------------------|----------------|
| a. ampere. | b. coulomb / second. | c. joule / coulomb. | d. volt / ohm. |
|------------|----------------------|---------------------|----------------|

31.The electrical resistance can measured by us in

- | | | | |
|--------------|---------------|-------------|--------------|
| a. ohmmeter. | b. voltmeter. | c. ammeter. | d. rheostat. |
|--------------|---------------|-------------|--------------|

32.One of the properties of the alternating current is

- | | |
|---|--------------------------------------|
| a. constant intensity. | b. constant direction. |
| c. variable direction and constant intensity. | d. variable intensity and direction. |

33.The hormone which stimulates body organs to respond for emergencies is

- | | | | |
|-------------|--------------|----------------|--------------|
| a. insulin. | b. glucagon. | c. adrenaline. | d. estrogen. |
|-------------|--------------|----------------|--------------|

34. Four similar electric cells are connected in series each one has e.m.f of 1.5 volt so the total e.m.f equal volt.

- | | | | |
|------|------|--------|-------|
| a. 3 | b. 6 | c. 1.5 | d. 12 |
|------|------|--------|-------|

35. Radioactivity phenomenon was known by

- | | | |
|---------|---------------|------------|
| a. Ohm. | b. Becquerel. | c. Ampere. |
|---------|---------------|------------|

36. Sliding rheostat is used to in the electric circuit.

- | |
|-------------------------------------|
| a. measure the current intensity |
| b. measure the potential difference |
| c. change the resistance value |

37. One of the properties of direct current is

- | |
|---|
| a. constant value and direction. |
| b. constant value but variable direction. |
| c. variable value but constant direction. |

38. liberates the energy necessary for the body from food.

- | | | |
|-------------------|-------------|-------------|
| a. Growth hormone | b. Thyroxin | c. Estrogen |
|-------------------|-------------|-------------|

39. When magnesium replaces copper in its salt solution, a precipitate is formed.

- | | | |
|------------|--------|------------------|
| a. black . | b. red | c. reddish brown |
|------------|--------|------------------|

40. The radioactive phenomenon was discovered by the scientist

- | | | |
|---------|---------------|------------|
| a. Ohm. | b. Becquerel. | c. Ampere. |
|---------|---------------|------------|

41. Human beings should not be exposed to radiation in amounts more than rem in a day.

- | | | |
|------|------|-------|
| a. 5 | b. 8 | c. 10 |
|------|------|-------|

42. it is chemically composed of the nucleic acid DNA combined with protein.

- | | | |
|---------------|----------------|----------|
| a. cytoplasm. | b. chromosome. | c. gene. |
|---------------|----------------|----------|

43. The hormone liberates the needed energy from the food stuff.

- | | | |
|------------|--------------|--------------|
| a. growth. | b. estrogen. | c. thyroxin. |
|------------|--------------|--------------|

44. The is the only way for hormones to reach the target cells.

- | | | | |
|-----------|----------|----------|----------|
| a. saliva | b. blood | c. water | d. ducts |
|-----------|----------|----------|----------|

45. Generating an alternating electric current is by using the

a. rheostat. b. dynamo. c. dry cell. d. voltmeter.

46. Human being should not be exposed to radiation in amount more than rem in a day.

a. 15 b. 5 c. 8 d. 10

47. The hormone responsible for appearance of female secondary sex characteristics is ...

a. thyroxin. b. adrenalin. c. estrogen. d. testosterone.

48. All the following metals replace hydrogen of acid except

a. potassium. b. magnesium. c. silver. d. zinc.

49. If an electric current of 0.2 amperes flows through an electric heater and potential difference between its two ends is 220 volt, its resistance equals to Ohms.

a. 1100 b. 11 c. 110 d. 11000

50. From compounds which are decomposed by heat into metal and oxygen is

a. $\text{Cu}(\text{OH})_2$ b. CaSO_4 c. CuCO_3 d. HgO

51. The two factors of hereditary trait are similar in the individual.

a. pure b. hybrid c. recessive d. pure and recessive

52. The scientist who discovered radioactivity phenomena was

a. Ampere. b. Ohm. c. Becquerel. d. Faraday.

53. From the dominant traits in the human being is the trait.

a. straight hair
b. wide eyes
c. absence of dimples in the face
d. presence of freckles in the face

54. According to Mendel's second law, each pair of the alternative traits is inherited independently of the others and appears in the second generation at a ratio of

a. 1 : 1 b. 2 : 1 c. 3 : 1 d. 4 : 1

55. Carbon dioxide evolves during thermal decomposition of compound.

a. HgO b. CuSO_4 c. CuCO_3 d. $\text{Cu}(\text{OH})_2$

56.The ratio between the potential difference across two ends of a conductor and the electric current intensity passing through it is equal to

- a. e.m.f.
- b. electric current.
- c. quantity of electricity.
- d . electric resistance.

57.Double substitution reactions between salt solutions are accompanied by formation of

- a. metal.
- b. a precipitate.
- c. an oxide.
- d. a non-metal.

58.The nuclear energy is peacefully used in the industrial field to convert sand to..... for manufacturing computer processors.

- a. electric energy
- b. silicon sheets
- c. nuclear fuel
- d. atomic bombs

59.The scientists discovered the means of how the gene controls the appearance of the hereditary trait.

- a. Mendel and Newton
- c. Johansen & Mendel
- b. Watson and Crick
- d. Badel and Tatum

60.All of the following are radioactive elements except.....

- a. radium.
- b. uranium.
- c. iron.
- d. cesium.

61.On adding silver nitrate solution to sodium chloride solution, is formed.

- a. a white precipitate of sodium nitrate
- b. a white precipitate of silver chloride
- c. a blue precipitate of silver chloride
- d. no precipitate

62.The measuring unit of the quantity of electricity is

- a. ampere.
- b. coulomb.
- c. volt.
- d. joule.

63.For measuring the electric resistance, device is used.

- a. ohmmeter
- b. ammeter
- c. voltmeter
- d. sliding rheostat

64.The unit of measuring the absorbed radiation is

- a. joule.
- b. coulomb.
- c. rem.
- d. newton.

65. If vaccination occurs between two individuals, both of them are hybrid and 200 members resulted from this vaccination, then the hybrid members produced may be individual.

- a. 50
- b. 100
- c. 150
- d. 200

66.The reaction $\text{Cl}_2 \rightarrow 2\text{e}^- + 2\text{Cl}^-$ represents process.

- a. oxidation b. reduction c. association d. substituting

67.When hydrochloric acid reacts with sodium carbonate, then the reaction produces gas which

- a. turbid limewater.
c. increases ignition.
b. burns with pop sound.
d. its color is red brown.

68.Which one of these traits is dominant in humans ?

- a. Smooth hair.
b. Freckles in the face.
c. Wide eyes.
d. Absence of dimples.

69.The charge transmitted by a constant current of intensity one ampere in one second is

- a. coulomb. b. volt. c. joule. d. ohm.

70.The most active metal in the chemical activity series is

- a. copper. b. sodium. c. hydrogen. d. aluminum.

71.The recessive trait appears in one of the sons if he inherited from his parents

- a. two dominant genes .
b. one dominant gene.
c. a recessive gene.
d. a recessive gene and a dominant gene.

72.If a pollination occurs between two hybrid individuals, the product is 200 individuals, so the number of produced hybrid individuals is likely to be individual.

- a. 50 b. 100 c . 150 d. 200

73.The reaction in which double substitution occurs between the ions of two compounds to form two other new compounds is called..... reaction.

- a. double substitution
b. simple substitution
c. neutralization
d. oxidation and reduction

74. Mendel chose the garden pea plant to conduct his researches for these reasons except one of them,

- a. it is easy to be planted the pea plant.
- b. it can self-pollinate.
- c. it can easily be artificially pollinated.
- d. its life cycle is long.

75. consists of nucleic acid DNA joined with protein.

- a. The gene
- b. The thymine
- c. The chromosome
- d. The cytoplasm

76. The ceramic cells in the catalytic converter leads to

- a. increasing the surface area exposed to the reaction.
- b. increasing the concentration of the reactants.
- c. increasing the temperature.
- d. no correct answer.

77. The is the only way for hormones to reach their sites of action.

- a. enzyme
- b. lymph
- c. blood
- d. duct

78. Man suffers from disease when his food lacks of iodine.

- a. dwarfism
- b. diabetes
- c. gigantism
- d. simple goiter

79. One of the properties of the direct current that it is

- a. changeable value.
- b. changeable direction.
- c. constant value and direction.

80. The rate of breaking up of hydrogen peroxide increases by the addition of

- a. manganese oxide.
- b. magnesium oxide.
- c. manganese dioxide.

81. According to Mendel's first law, the hereditary factors when gametes are formed.

- a. combine
- b. segregate
- c. disappear

82. The speed of most chemical reactions is by rising temperature.

- a. increased
- b. decreased
- c. not affected

83. The hormone liberates the needed energy from the food stuff.

- a. growth
- b. estrogen
- c. thyroxin
- d. testosterone

84. The disorder resulted from the increase of thyroxin hormone secretion in large amounts is the

- a. exophthalmic goiter.
- b. simple goiter.
- c. diabetes.
- d. dwarfism.

85. Insulin hormone stimulates body cells to glucose sugar from the blood.

- | | | | |
|-----------|--------------|--------------|--------------|
| a. absorb | b. hydrolyce | c. decompose | d. breakdown |
|-----------|--------------|--------------|--------------|

86. At the end of the chemical reaction, the concentration of the reactants is %

- | | | | |
|---------|-------|-------|--------|
| a. zero | b. 50 | c. 75 | d. 100 |
|---------|-------|-------|--------|

87. The genetic structure of wrinkled yellow colored seeds of a pea plant is

- | | | | |
|---------|---------|---------|---------|
| a. yySS | b. YYSS | c. yyss | d. YYss |
|---------|---------|---------|---------|

88. In the electric cell, energy is converted into electric energy.

- | | | | |
|-------------|------------|-------------|----------|
| a. magnetic | b. kinetic | c. chemical | d. light |
|-------------|------------|-------------|----------|

89. When passing hydrogen gas on hot black copper oxide, process occurs for copper oxide.

- | |
|--------------------------|
| a. oxidation |
| b. reduction |
| c. thermal decomposition |
| d. (a) and (b) together |

90. Which of the following traits is recessive in the human being ?

- | |
|--------------------------|
| a. Wide eyes. |
| b. Black hair. |
| c. Presence of dimples. |
| d. Presence of freckles. |

91. When sodium atom loses an electron from its outermost energy level, it becomes

- | | | | |
|--------------|--------------------|-------------|-----------------------------|
| a. oxidized. | b. reducing agent. | c. reduced. | d. (a) and (b) are correct. |
|--------------|--------------------|-------------|-----------------------------|

92. The measuring unit of the absorbed radiation is the

- | | | | |
|-----------|---------|---------|------------|
| a. curie. | b. rem. | c. ohm. | d. ampere. |
|-----------|---------|---------|------------|

93. Which of the following traits is dominant in human being ?

- | | | | |
|-----------------|------------------------|---------------|--------------------------|
| a. Smooth hair. | b. Absence of dimples. | c. Wide eyes. | d. Presence of freckles. |
|-----------------|------------------------|---------------|--------------------------|

94. When magnesium replaces copper in its salt solution, a precipitate is formed.

- | | | | |
|----------|----------|--------|-----------------------|
| a. black | b. green | c. red | d. no correct answer. |
|----------|----------|--------|-----------------------|

95. The value of the resistance of an electric conductor in an electric circuit is changed on changing the

- | | |
|--|---|
| a. dimensions of the conductor. | b. electric current intensity passing through it. |
| c. quantity of electricity that passes through it. | d. potential difference between its terminals. |

96. The ceramic cells in the catalytic converter leads to

- a. increasing the surface area exposed to the reaction.
- b. increasing the concentration of the reactants.
- c. increasing the temperature.
- d. no correct answer.

97. Sodium bicarbonate is used in polishing silver by using a piece of during washing .

- a. copper foil
- b. zinc foil
- c. aluminums foil
- d. chrome foil

98. element shares in composing thyroxin hormone.

- a. Iodine
- b. Iron
- c. Sodium
- d. No correct answer

99. If an electric current has 0.2 ampere passes through an electric heater and the potential difference between its terminals equals 220 volt, so the heater resistance equals ohm.

- a. 20
- b. 1000
- c. 1100
- d. 2200

100. The reaction between silver nitrate and sodium chloride is from reactions.

- a. fast
- b. intermediate
- c. slow
- d. very slow

101. From the dominant traits in the human being is trait.

- a. straight hair
- b. attached ear lobe
- c. narrow eyes
- d. absence of freckles

102. From non-radioactive elements is.....

- a. radium.
- b. uranium.
- c. cesium.
- d. iron.

☀(3) Complete the following:

1. The is used to measure the electromotive force of the battery in measuring unit is called
2. When magnesium replaces copper in its salt solution a precipitate its color is is formed.
3. When glucose level is increased in blood, the pancreas secretes hormone.
4. The radioactivity phenomenon was discovered by scientist.
5. When the amount of glucose decreases in the blood, pancreas secretes hormone.
6. In electric cell energy is converted into electric energy.
7. Transmission of electric charges depends on the between two conductors.
8. Breaking down the bonds between the molecules of the reactant substances and formation of new substances is called
9. The thyroid gland secretes hormone that regulates the calcium level of the blood.
10. Henry Becquerel discovered the emission of an unseen rays from element.
11. hormone is responsible for female secondary sex character.
12. The is used to measure the electric resistance in units known as
13. Electrochemical cells convert energy into energy.
14. At the beginning of the chemical reaction, the concentration of reactants is% .
15. The traits that are not transmitted from one generation to another are called traits.
16. is from the examples of electrochemical cells.
17. apparatus is used to measure the resistance in the electric circuit.
18. The chemical energy is converted into electric energy by cells.
19. The scientific idea of the dominance of the curly hair trait over the straight hair trait is principle.

20. Dry cells produce current, while electric generators produce current.
21. Nuclear energy is used in medicine in and
22. Neutralization it is the reaction between an acid and an alkali forming and
23. During the chemical reaction, the concentration of decreases, while the concentration of increases by the time.
24. The scientist who discovered the emission of an unseen rays from the element.
25. Chromosome is chemically composed of which is combined with
26. The resistance of a conductor that (1) ampere is passed through it when the potential difference between its terminal is (1) volt =
27. The hormone that secretes when the level of calcium increase in blood is the hormone.
28. The reactions of covalent compounds is
29. Carbon dioxide gas detected by changes into turbid.
30. Dry cells produce current.
31. In the beginning of the reaction, the concentration of the reactants is %
32. The measuring unit for absorbed radiation is
33. At the end of the reaction, the concentration of reactant is %
34. The scientist is the founder of heredity.
35. When the amount of glucose decreases in the blood, pancreas secretes of hormone.
36. The is used to measure the current intensity in units known as
37. The plant formed its food during photosynthesis process from the reaction between and
38. The instrument which is used to measure the electric potential difference is
39. chromosome is chemically consisted of a nucleic acid called DNA binds with the

40. Sodium metal reacts with water producing sodium hydroxide and gas evolves.
41. The scientist Mendel named the trait that appears in all individuals of the first generation as the trait, while the other (contrasting) trait that disappears in the individuals of the first generation as the trait.
42. $\text{Na}_2\text{CO}_3 + \dots \longrightarrow 2\text{NaCl} + \text{H}_2\text{O} + \text{CO}_2$
43. One of the properties of the direct current is that
44. Every hereditary trait is controlled by two hereditary factors which separate during formation of the
45. gas turbid the clear lime water.
46. The curly hair trait dominates over the straight hair trait is follows the principle of in human being.
47. Some reactions are very slow and need several months to take place, such as the formation of
48. The..... project is interested in the effect of the various mutations on the function of the genes.
49. The electric current produced from electrochemical cells (batteries) is known as the..... current.
50. The is used to measure the electric resistance.
51. From very slow reactions which need several months is
52. The pea plant is easy to and its life cycle
53. The speed of chemical reaction can be practically measured by the rate of..... of reactants or the rate of of resultants.
54. Endocrine glands secrete more than hormones in the human body.

✱(4) Correct the underlined words:

1	The reactions of covalent compounds are <u>faster</u> than that of ionic compounds.	(.....)
2	The <u>glucagon</u> hormone controls the calcium levels in the blood.	(.....)
3	The nucleus of each cell carry a complete group of <u>hormones</u> which is responsible for appear the hereditary traits in living organisms.	(.....)
4	Rate (speed) of chemical reaction is increased by <u>decreasing</u> the temperature.	(.....)
5	<u>Attached</u> ear lobe is one of the dominant trait in human being.	(.....)
6	The hormone which regulates the level of calcium in the blood is the <u>insulin</u> hormone.	(.....)
7	The ionic compounds are fast in their reaction because they decompose into <u>molecules</u> that easy share in the reaction.	(.....)
8	Mendel removed the <u>petals</u> from the flowers of pea plant to prevent the self-pollination.	(.....)
9	At the decrease of sugar level in the blood, the <u>liver</u> responds by secreting glucagon hormone.	(.....)
10	When we add silver nitrate solution to sodium chloride solution a white precipitate is formed of <u>sodium nitrate</u> .	(.....)
11	<u>Mendleef</u> is considered as the founder of heredity.	(.....)
12	The radioactive phenomenon was discovered by the scientist <u>Ohm</u> .	(.....)
13	The <u>catalyst</u> is the substance which loses one or more electrons during the chemical reaction.	(.....)
14	In the dry cell, the <u>mechanical</u> energy is converted into electrical energy.	(.....)
15	<u>Watson and Creek</u> scientists discovered the means of how gene controls the appearance of a trait.	(.....)
16	When pancreas stops secreting insulin hormone, the level of glucose sugar <u>decreases</u> in the blood.	(.....)
17	<u>Estrogen hormone</u> is responsible for male secondary sex character	(.....)
18	The increase of growth hormone secretion in the childhood causes <u>dwarfism</u> .	(.....)
19	In the electric cell, <u>magnetic</u> energy is converted into electric energy.	(.....)
20	The radio activity phenomenon was discovered by scientist <u>ohm</u> .	(.....)
21	The <u>acquired</u> traits are transmitted from a generation to another.	(.....)
22	A <u>brown</u> precipitate is formed on adding magnesium to copper sulphate solution.	

23	Chromosome is chemically consists of nucleic acid DNA is bind with <u>fats</u> .	
24	<u>Oxygen</u> gas detected by changes limewater into turbid.	
25	<u>Iron</u> element participates in the composition of thyroxin hormone.	
26	From uses of nuclear energy in <u>medical</u> field eliminate pests and improve some plants races.	
27	<u>Ammeter</u> apparatus is used to measure electric potential difference.	
28	Increasing the concentration of <u>products</u> make the number of collisions between molecules increase consequently the speed of reaction increase.	
29	The two factors of a hereditary trait are <u>similar</u> in the hybrid individual.	
30	In the atom, <u>protons</u> considered the store of energy.	
31	The two scientists <u>Padel & Tatum</u> made a model for DNA molecule.	
32	The reactions of covalent compounds are <u>faster</u> than that of ionic compounds.	
33	Rate (speed) of chemical reaction is increased by <u>decreasing</u> the temperature.	
34	Mendel removed the <u>petals</u> from the flowers of pea plant to prevent the self-pollination	
35	The ionic compounds are fast in their reaction because they decompose into <u>molecules</u> that easy share in the reaction.	
36	<u>Mendeleev</u> is considered as the founder of heredity.	
37	The radioactive phenomenon was discovered by the scientist <u>Ohm</u> .	
38	Mendel's first law is called the law of <u>independent assortment of hereditary factors</u> .	
39	Nitrogen pentoxide breaks up into nitrogen dioxide gas and <u>nitrogen</u> gas.	
40	Mendel chose <u>eleven</u> main traits of pea plant to conduct his experiments.	
41	Genes are parts of DNA found in the <u>cytoplasm</u> of the cell.	
42	In the circuit of the direct current, <u>molecules</u> flow from one of the two poles to the other in the electrochemical cell.	
43	Most of metal carbonates decompose when heated into <u>metal</u> and carbon dioxide.	
44	The unit of measuring the electric charges is <u>volt</u> .	
45	The electric current intensity passing in a conductor is directly proportional to the <u>resistance</u> at constant temperature.	

☀(5) Give reason for:

1. Mendel chose pea plant to make his experiments.

Because of the following reasons:

It is easy to be planted and it grows fast.

Its life cycle is short.

Its flowers are hermaphrodite so it can be self-pollinated.

It can easily be pollinated artificially.

It produces large number of plants in generation.

It has several pairs of easily recognized contrasting traits.

2. Pituitary gland is called the master gland.

Because it controls the actions of other endocrine glands.

3. The ability of rolling the tongue is a dominant trait in the human being.

Because it appears even if its hybrid.

4. The combustion of steel scourers used for cleaning aluminium in jar contains oxygen is faster than its combustion in the air.

Because when the conc. of reactants increases the rate of reaction increases.

5. The rate of chemical reaction is increased by increasing the reactants concentration.

Because it increases the collisions between molecules.

6. The rate (speed) of chemical reaction increases by heating ..

Because it increases the collisions between molecules.

7. DNA molecule is called the double helix.

Because DNA is composed of two strands coiled around each other like a spiral ladder.

8. Gold does not react with diluted acids.

Because gold comes after hydrogen in the reactivity series.

9. The area chosen for storing radioactive wastes should be more steady.

To be away from earthquake volcanoes.

10. Mendel removed the stamens from the flowers of pea plant during his experiments.

To insure that the plant doesn't self-pollinate.

11. It is preferred to use alternating current more than direct current.

As it can be transmitted for long distances and can be changed into direct current so it is used in lighting houses & operating many devices.

12. Rheostat is used in some electric circuits.

To control the current intensity passing.

13. The ionic compound reacts faster than covalent compound.

Because ionic compounds will be broken down into ions.

14. Copper doesn't react with dilute HCl.

Because copper comes after hydrogen in the reactivity series

15. • Radium is considered as a radioactive element.

• Polonium is a radioactive element.

Because the nucleus of its atom contains a number of neutrons more than the number required for its stability

16. • Food preservation in the freezer of the refrigerator.

• The fridge is used to preserve food.

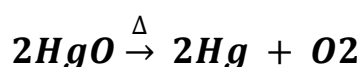
Because the speed of reaction slows down in low temperature.

17. • Red precipitate is formed on adding a piece of magnesium to copper sulphate solution (Write the chemical equation of the reaction with your answer).

• When red mercuric oxide is heated, a silvery precipitate is formed.

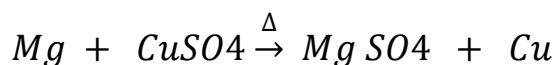
• The formation of silver color on heating red mercuric oxide.

Because mercury which is silver in color is produced.



18.Occurrence of reaction between magnesium and copper sulphate solution.

Because magnesium comes before copper in C.A .S .. so it re places copper in copper sulphate solution.

**19.Some electric circuits contain variable resistance.**

To control the electric current intensity passing through the circuit

20.The rate of the reaction of hydrochloric acid with the iron filings is faster than that with a piece of iron of the same mass.

Because when the surface area of reactants increases the rate of reaction increases.

21.● A gas evolves on putting a piece of aluminum in diluted hydrochloric acid .

● The occurrence of effervescence on putting a piece of aluminum in dilute HCl.

Because substitution reaction occurs when aluminum replaces hydrogen as it comes before hydrogen in the reactivity series.

22.● Speed of chemical reaction increases with rise in temperature.

● The speed of chemical reaction increases by increasing temperature.

Because it increases the collisions between molecules.

23.When a yellow pod pea plant is pollinated with a pure green pod pea plant, they produce plants that are all with green pods.

Because the trait of green pods dominates over the trait of yellow pods in pea plant according to the principle of complete dominance.

24.The exposure to radiation has genetic effects.

Radiation has genetic effects.

As it causes changes in sex chromosomes resulting in abnormal birth.

25.Learn to walk in children is not considered as a genetic trait.

Because it is acquired trait that cannot be transmitted from a generation to another.

26. Some people who depend mainly on eating rice have deficiency in vitamin (A).

Because rice doesn't contain pro-vitamin in (A) known as carotene which is converted into vitamin (A) inside the body.

27. Although aluminum comes before zinc in chemical activity series, but it takes a longer time to react with hydrochloric acid practically.

Due to the presence of a layer aluminum oxide (Al_2O_3) on aluminum surface , which takes time to separate from aluminum , which delays the starting of occurrence of the reaction.

28. Some electric cells are connected in the electric circuit in series.

To obtain high e.m.f.

29. The voltmeter is connected between the two poles of battery.

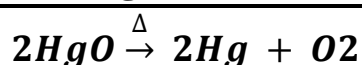
To measure the e.m.f. of a battery.

☀(6) What happen if:

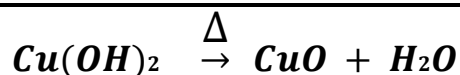
1. Exposure of human body to a large dosage of radiation for a short time.

it can damage the bone marrow that is responsible for red blood cells formation.

2. Heating of red mercuric oxide "illustrate by balanced symbolic equation".



3. Heating blue copper hydroxide.



4. Pancreas does not secrete glucagon hormone.

Blood sugar level increases causing diabetes.

5. The electric current intensity if the length of the rheostat wire increases .

The electric current intensity decrease.

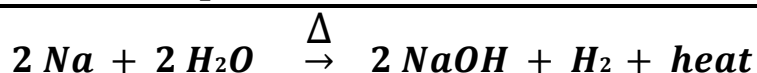
6. Adding a negative catalyst to rapid reaction.

The speed of reaction decrease

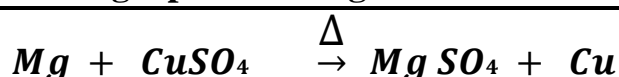
7. Lack of iodine in man's food.

Decrease in thyroxin secretion leading to simple goiter.

8. Put a small piece of sodium in water. (write the chemical equation balanced)



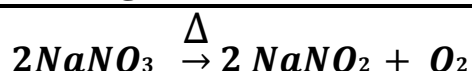
9. Putting a piece of magnesium in blue copper sulphate solution.



10. When one of the endocrine glands does not act properly.

Hormone disorder occurs.

11. Heating of sodium nitrate.



12. If the length of the rheostat wire increases (Related to the electric current intensity).

The electric current intensity decreases.

13. A substance gains an electron or more during a chemical reaction.

It will be reduced and changed into a negative ion and it became an oxidizing agent.

14.The stigma of the flower of pea plant uncovered during the study of the inherited traits .

Cross-pollination with other flowers will occur.

15.Two conductors having the same electric potential are connected together by a wire.

Touching two charged conductors by a conducting bar, the first conductor has an electric potential is equal to the electric potential of the second one.

No electric current flows, because there is no potential difference.

16.Heating the solution resulting from the reaction between hydrochloric acid and sodium hydroxide.

Water (H₂O) evaporates and sodium chloride (NaCl) remains.

17.The atom nucleus of an element contains a number of neutrons more than the number required for its stability.

Its energy increases , so it emits unseen (invisible) radiations to reach a more stable composition .

18.You keep food outside the refrigerator for a long time.

Food becomes rotten due to increasing chemical reactions done by bacteria.

19.Two charged conductors touch and the electric potential of one conductor is 10 volt but the electric potential of the other conductor is 30 volt.

The electric charges transfer from the second conductor to the first conductor until their electric potential becomes equal.

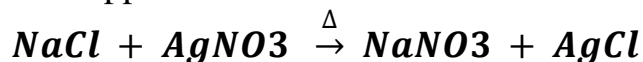
20.Heating of sodium nitrate.

A yellowish white substance of sodium nitrite is formed and oxygen gas evolves.



21.Adding silver nitrate solution to sodium chloride solution.

white ppt. of silver chloride is formed.



22.Replacing dilute hydrochloric acid by concentrated hydrochloric acid when reacting with magnesium.

The speed of chemical reaction increases .

23.Two pure individuals bearing two pairs of contrasting traits are crossed.

The trait of each pair is inherited independently and all individuals of the first generation appear carrying the dominant traits only and in the second generation , the dominant trait and the recessive trait appear at a ratio of 3 : 1

24.When the dominant gene exists with another for the same characteristic.

The dominant trait appears.

25.the number of collisions when the temperature of the reaction is raised up.

Increasing the number of collisions by increasing the temperature

26.When manganese dioxide (MnO₂) is added in a test tube that contains hydrogen peroxide.

The rate of decomposition of hydrogen peroxide increases.

27.If there is a mating between two individuals resulting in producing 50% dominant individuals and 50% recessive individuals.

The dominant individuals are hybrid .

28.When the potential difference increases between two ends of a conductor with a fixed resistance in the closed circuit.

The current intensity in the conductor increases.

29.The gene cannot give its special enzyme.

A gene failed to produce its own enzyme.

The chemical reaction which results in a protein showing a specific hereditary trait will not occur.

☀(7) Put (√) or (X) in front of the following sentences:

1. A member that gains one gene for freckles in the face becomes without feature. ()
2. The chemical reaction is a process of breaking up of bonds between molecules of reactants and formation of new bonds in products molecules. ()
3. The hybrid individual carries a gene for the dominant characteristic and another one for he recessive characteristic. ()
4. Reaction of iron filings (powder) with sulphuric acid H_2SO_4 becomes slower than the reaction of block of iron with the same acid. ()
5. Radium is one of the natural radioactive elements. ()
6. The glucagon hormone is secreted by pituitary gland. ()
7. The iron element shares in composing thyroxin hormone. ()
8. The decrease in secretion of insulin hormone causes diabetes disease. ()
9. Sodium carbonate is used in polishing silver. ()
10. Copper sulphate is decomposed by heat into black copper oxide and sulphur dioxide gas. ()
11. To generate an alternating electric current, we use the coulomb. ()
12. The two factors of a hereditary trait are similar in the hybrid individual. ()
13. In the electric cell, the magnetic energy is converted into electric energy. ()
14. In positive catalytic reactions , catalyst is used to slow down the speed of the chemical reaction. ()
15. The electromotive force (e.m.f.) of several cells connected in parallel equals the electromotive force (e.m.f.) of one cell. ()
16. The two factors of a hereditary trait are similar in the hybrid individual. ()
17. The radioactivity phenomenon was discovered by the scientist Badel. ()
18. Copper sulphate decomposes by heat into copper oxide and sulphur dioxide gas. ()
19. The acquired traits are not transmitted from one generation to another. ()
20. Mendel removed the stamens of pea plant flowers before the anther becomes mature during his experiments to prevent cross pollination with other flowers. ()
21. The oxidizing agent (factor) is the substance which takes oxygen away or gives hydrogen during a chemical reaction. ()
22. The electric current intensity passing through a conductor is directly proportional to the potential difference across it at a constant temperature. ()
23. Mendel's second law is called the law of segregation of factors. ()
24. Most metal sulphates decompose when they are heated to metal oxide and sulphur trioxide gas evolves. ()
25. Genes are parts of DNA found in the cytoplasm of the cell. ()
26. Ohmmeter is used to control the electric resistance in the electric circuit. ()
27. Aluminium reacts with diluted hydrochloric acid faster than the reaction of zinc with the same acid. ()

☀(8) Problems

1 Calculate the quantity of electricity that passes through a conductor of a resistance 2200 ohm for 30 minutes if the potential difference between its terminals is 220 volt.

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2

From the following reaction :



Explain oxidation and reduction processes

{if you know that the atomic number of Na is (11) and Cl is (17)}

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3 Explain on genetic bases: the properties of the generation produced from self-pollination in a pea plant that has a hybrid yellow seeds, known that dominant gene is symbolized by (Y) & recessive one is symbolized by (y) mention the ratio of produced individual.

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4 You have four similar cells the e.m.f. for each cell is 1.2 volt. Explain by using diagrams how can connect them to obtain a battery of e.m.f. 2.4 volts with two different ways.

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5 Using symbols to express the results of mating between white flower pea plant and the other red flower plant. Conclude their ratio.

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6 You have three similar cells, the electromotive force of each is (1.5 volt). Explain by drawing how can you get :

1. A battery of e.m.f (1.5 volt)
2. A battery of e.m.f (4.5 volt).

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7



in this reaction determine the oxidizing agent and reducing agent.

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8 Crossing occurred between male and female of drosophila each of them has a long wing the result was (27) long wing individuals, (9) short wing individuals. Explain that on genetic basses, knowing that long wing trait symbolized by (T) and short wing trait symbolized by (t).

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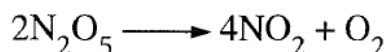
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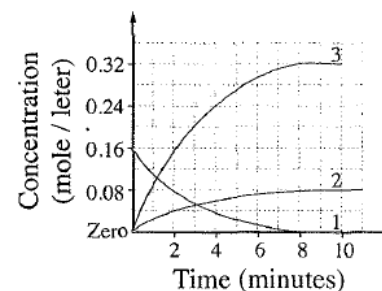
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9

The following equation explains the decomposition of a compound :



The opposite graph illustrates the change in concentration of reactants and resultants in respect to time, write the name of the compounds which is indicated by each number (1, 2, 3).

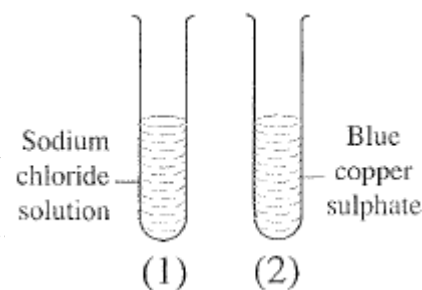
**10**

The potential difference between two ends of a conductor is (6 volt) and the electric current intensity passing in the conductor is (0.5 ampere). What is the electric current intensity passing in the conductor if it is connected by electric source. its electric potential is (12 volt) ?

11

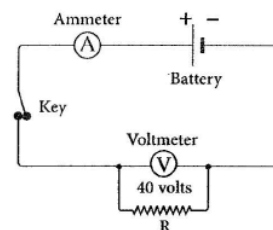
In the opposite figure silver nitrate is added to the tube (1)

1. What is the color of the precipitate in the tube (1) ?
2. What is the name of the gas evolved in the tube (2) ?
3. Write the balanced chemical equation for the reaction in the



12 Calculate the current intensity passing through the opposite electric circuit if the work done to transfer the electric charge is 240 joules and the time of flowing of the electric charge is 2 seconds.

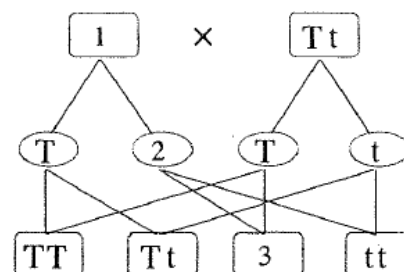
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13 The following figure represents the process of pollination in a pea plant of hybrid tall stem.

1. Write what is indicated by the numbers (1) , (2) and (3) by suitable symbols in your answer paper.
2. Define the law of segregation.

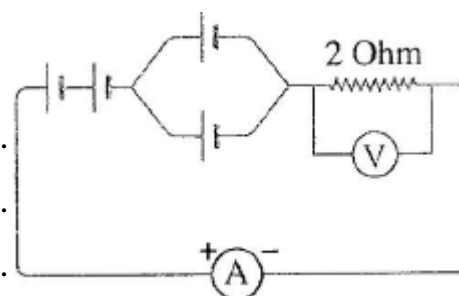
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14 from this figure if the electromotive force of each cell is two volts . find

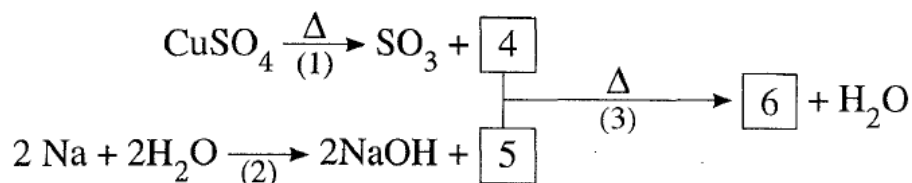
1. The reading of voltmeter ?
2. The reading of ammeter?

.....



15

Study the chemical reactions, in the following diagram then answer the following question :



First : Mention the type of chemical reactions : 1 , 2 , 3

Second : Write the chemical formula for : 4 , 5 , 6

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16

From the reaction : $2\text{NaOH} + \text{CuSO}_4 \longrightarrow \text{salt} + \text{precipitate}$

Answer the following :

1. Mention the name of the salt.
2. How can you measure the speed of reaction practically ?
3. What happens to the precipitate if heated strongly ?
(Write the equation of the reaction).

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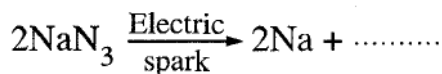
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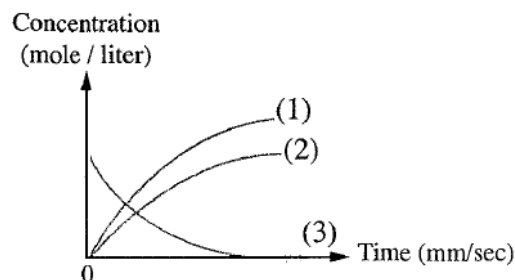
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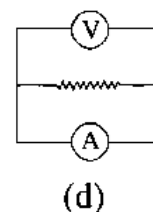
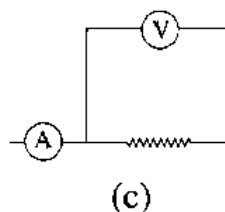
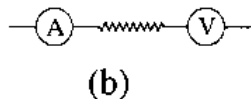
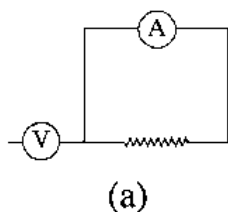
The opposite graph represents the rate of rapid decomposition of the substance of sodium azid. (which is present inside the air bag)



1. Complete the equation.
2. From the graph, write the name of compound indicated by each number.
3. Mention the importance of air bag.

**18**

Which one of the following figures represents a part of an electric circuit that contains an ammeter and a voltmeter connected in right way ?

**19**

There are three identical electric cells whose e.m.f. = 6 volt are connected in the electric circuit by a certain method and the total resistance = 4 ohm (Q). Show by drawing and solving how the circuit is connected to obtain a current = 1.5 ampere.

20 The hybridization in the *Drosophila* between a male and a female, both of them are long wings and the product is 27 members with long wings and 9 members with short wings. Explain that on genetic bases (If the long wing is T and short wing is t).

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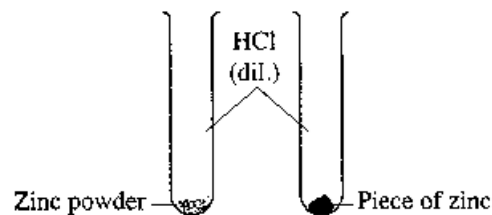
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21

From the opposite figures. Show :

1. The type of the chemical reaction.
 2. The factor that affects the speed of this reaction.
 3. Write the balanced symbolic chemical equation express this reaction.
-
-
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-



22 Use the following symbols to show the results of the mixed pollination between two pea plants, where one carries two pure dominant traits, tall stem and red flowers (TTRR) and the other carries two recessive traits, short stem and white flowers (ttrr) (The first generation only).

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23

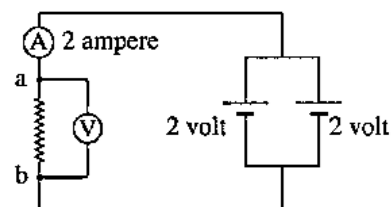
From the opposite circuit, find the work done required to transfer a quantity of electric charge between points (a) and (b) through 5 minutes if the electromotive force of each cell is two volt and the reading of ammeter is two ampere.

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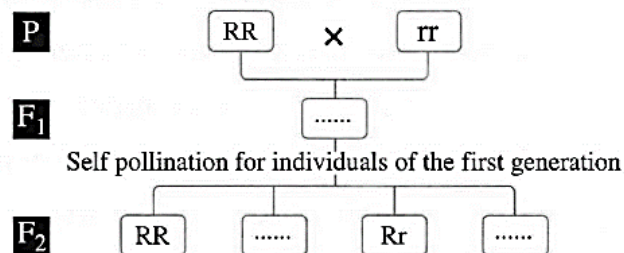
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24

The opposite figure illustrates a cross-pollination :
between a pea plant with red flowers
and another pea plant with white flowers :



1. Determine by symbols the individuals of the first generation.
2. Fill in gaps the second generation.
3. Is the results verify Mendel's first law ?
State your reason.

25

Choose from columns (B) and (C) what suit with column (A), then write the complete statements :

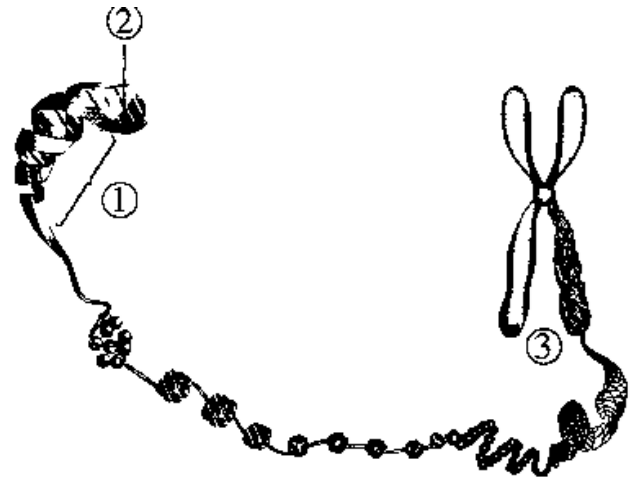
(A) The reaction	(B) Gas produced	(C) Type of reaction
1. Zinc with dil. hydrochloric acid.	A. SO ₃ ↑	a. Precipitation reaction.
2. Heating copper sulphate.	B. CO ₂ ↑	b. Simple substitution.
3. Sodium carbonate with hydrochloric acid.	C. O ₂ ↑	c. Thermal decomposition.
	D. H ₂ ↑	d. Double substitution.
		e. Direct combination.

26

First : Study the opposite figure, then answer :

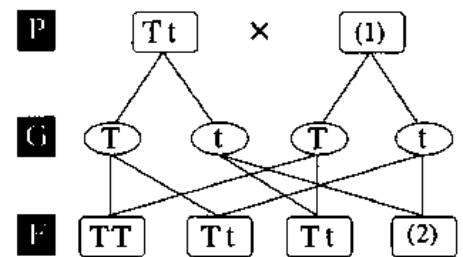
1. Give the name of ① , ② & ③.
2. Mention the name of the structural units of number ①.
3. Mention the name of chemical structure of number ③.

Second : Mention two reasons for choosing Mendel the pea plant to conduct his experiments.

**27**

In the opposite figure, a self pollination takes place in hybrid pea plant with tall stem :

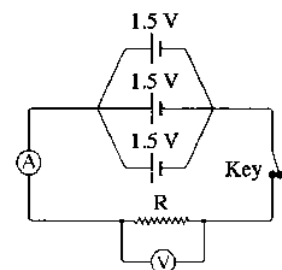
Replace the numbers (1 & 2) with suitable symbols.

**28**

From the opposite electric circuit :

If a quantity of electricity which passes through the electric circuit in a time 40 second is 20 coulomb.

- Find :
1. The ammeter reading.
 2. The voltmeter reading.
 3. The value of the resistance (R).



Model Answer

✱ (1) Write the scientific term:

- | | |
|------------------------------------|-------------------------------------|
| 1. Electric resistance | 37. Natural radioactivity |
| 2. Endocrine glands | 38. Chromosome |
| 3. Coulomb | 39. Catalyst |
| 4. Double substitution reaction | 40. Genes |
| 5. Electric current | 41. Dominant traits |
| 6. Dominant traits | 42. Neutralization reaction |
| 7. Endocrine glands | 43. Ohm |
| 8. Current intensity | 44. Speed of chemical reaction |
| 9. Growth hormone | 45. Reducing agent |
| 10. Reducing agent | 46. Hormones |
| 11. Hormones | 47. Resistance |
| 12. Thermal decomposition reaction | 48. Double substitution reaction |
| 13. Radioactivity phenomenon | 49. Electric current |
| 14. Alternating electric current | 50. Dominant traits |
| 15. Genes | 51. Current intensity |
| 16. Rem | 52. Reducing agent |
| 17. Hormone disorder | 53. Rem |
| 18. Salt | 54. Salt |
| 19. Chemical reaction | 55. Chemical reaction |
| 20. Speed of chemical reaction | 56. Electric potential |
| 21. Ohm | 57. Oxidation process |
| 22. Estrogen | 58. Ohm's law |
| 23. Electric potential | 59. Potential difference |
| 24. Speed of chemical reaction | 60. Hormones |
| 25. Oxidation | 61. Hereditary traits |
| 26. Hormone | 62. Voltmeter |
| 27. Pure individual | 63. Chromosome |
| 28. Transformer | 64. Electromotive force |
| 29. Chemical activity series | 65. The catalyst |
| 30. Chemical reaction | 66. Coulomb |
| 31. Radioactivity phenomenon | 67. Genome |
| 32. Ohm | 68. Physical change |
| 33. Acquired traits | 69. Oxidase enzyme |
| 34. Coulomb | 70. Electric potential of conductor |
| 35. Volt | 71. Chromosome |
| 36. Chemical activity series | |

★(2) Choose the right answer:

- | | | |
|------|------|--------|
| 1. C | 35.B | 69.A |
| 2. D | 36.C | 70.B |
| 3. B | 37.A | 71.C |
| 4. A | 38.B | 72.B |
| 5. B | 39.C | 73.A |
| 6. C | 40.B | 74.D |
| 7. C | 41.A | 75.C |
| 8. A | 42.B | 76.A |
| 9. B | 43.C | 77.C |
| 10.A | 44.B | 78.D |
| 11.B | 45.B | 79.C |
| 12.C | 46.B | 80.C |
| 13.D | 47.C | 81.B |
| 14.A | 48.C | 82.A |
| 15.C | 49.A | 83.C |
| 16.A | 50.D | 84.A |
| 17.B | 51.D | 85.A |
| 18.B | 52.C | 86.A |
| 19.A | 53.B | 87.D |
| 20.B | 54.C | 88.C |
| 21.D | 55.C | 89.B |
| 22.B | 56.D | 90.D |
| 23.C | 57.B | 91.D |
| 24.C | 58.B | 92.B |
| 25.C | 59.D | 93.C |
| 26.C | 60.C | 94.C |
| 27.C | 61.B | 95.A |
| 28.D | 62.B | 96.A |
| 29.D | 63.A | 97.C |
| 30.C | 64.C | 98.A |
| 31.A | 65.B | 99.C |
| 32.D | 66.A | 100. A |
| 33.C | 67.A | 101. D |
| 34.B | 68.C | 102. D |

✱(3) Complete the following:

- | | | |
|-------------------------|---------------------------------------|--------------------------------------|
| 1. Voltmeter – volt | 21.Diagnosis – treatment of cancer | 39.Protein |
| 2. Reddish brown | 22.Salt – water | 40.Hydrogen |
| 3. Insulin | 23.Reactant – product | 41.Dominant – recessive |
| 4. Becquerel | 24.Henri Becquerel – uranium | 42.2 HCl |
| 5. Glucagon | 25.DNA – Protein | 43.Has constant intensity and direct |
| 6. Chemical | 26. (1) ohm | 44.Gametes |
| 7. Potential difference | 27.Calcitonin | 45.Carbon dioxide |
| 8. Chemical reaction | 28.Slow | 46.Complete dominance |
| 9. Calcitonin | 29.Limewater | 47.Iron rust |
| 10.Uranium | 30.Direct | 48.Genome |
| 11.Estrogen | 31.100 % | 49.Direct |
| 12.Ohmmeter – ohm | 32.Rem | 50.Ohmmeter |
| 13.Chemical – electric | 33.Zero | 51.Iron rust |
| 14.100 % | 34.Mendel | 52.Be plant – short |
| 15.Acquired | 35.Glucagon | 53.Disappearance – appearance |
| 16.Dry cell | 36.Ammeter – ampere | 54.50 |
| 17.Ohmmeter | 37.CO ₂ – H ₂ O | |
| 18.Dry | 38.Voltmeter | |
| 19.Complete dominance | | |
| 20.Direct – alternating | | |

✱(4) Correct the underlined words:

- | | | | |
|--------------------|-------------------------|---------------------|--------------------------|
| 1. Slower | 13.Reducing agent | 24.Carbon dioxide | 36.Mendel |
| 2. Calcitonin | 14.Chemical | 25.Iodine | 37.Becquerel |
| 3. Genes | 15.Badel and Tatum | 26.Agricultural | 38.Segregation of factor |
| 4. Increasing | 16.Increase | 27.Voltmeter | 39.Oxygen |
| 5. Free | 17.Testosterone hormone | 28.Reactant | 40.Seven |
| 6. Calcitonin | 18.Gigantism | 29.Different | 41.Nucleus |
| 7. Ions | 19.Chemical | 30.Nucleus | 42.Electrons |
| 8. Stamens | 20.Becquerel | 31.Watson and creek | 43.Metal oxide |
| 9. Pancreas | 21.Hereditary | 32.Slower | 44.Coulomb |
| 10.Silver chloride | 22.Reddish brown | 33.Increasing | 45.Potential difference |
| 11.Mendel | 23.Protein | 34.Stamens | |
| 12.Henri Becquerel | | 35.Ions | |

✱(7) Put (√) or (X)

- | | | | | |
|----------|-----------|-----------|-----------|-----------|
| 1. (X) | 7. (X) | 13. (X) | 19. (√) | 25. (X) |
| 2. (√) | 8. (√) | 14. (X) | 20. (X) | 26. (X) |
| 3. (√) | 9. (X) | 15. (√) | 21. (X) | 27. (X) |
| 4. (X) | 10. (X) | 16. (X) | 22. (√) | |
| 5. (√) | 11. (X) | 17. (X) | 23. (X) | |
| 6. (X) | 12. (X) | 18. (X) | 24. (√) | |

*(8) problems

1

$$I = \frac{V}{R} = \frac{220}{2200} = 0.1 \text{ ampere}$$

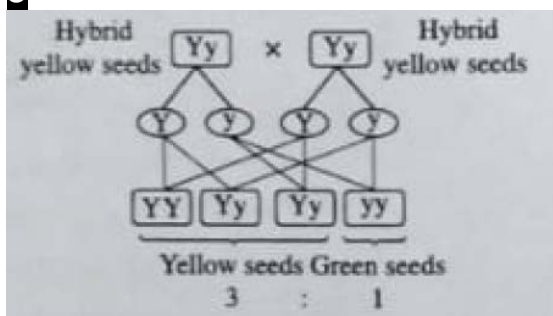
$$q = I \times t = 0.1 \times 30 \times 60 = 180 \text{ coulomb.}$$

2

Sodium atom is oxidized because it loses an electron, while chlorine atom is reduced because it gains an electron which lost from Sodium atom.

	K	L	M
Na	2	8	1
Cl	2	8	7

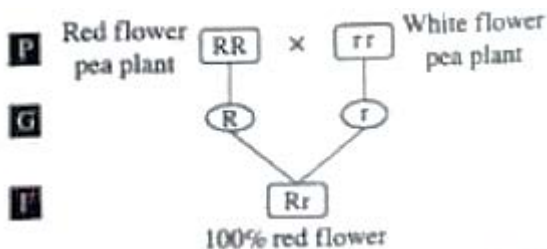
3



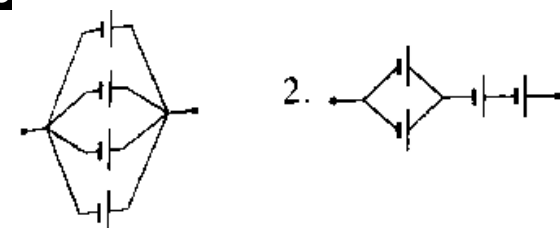
4



5



6

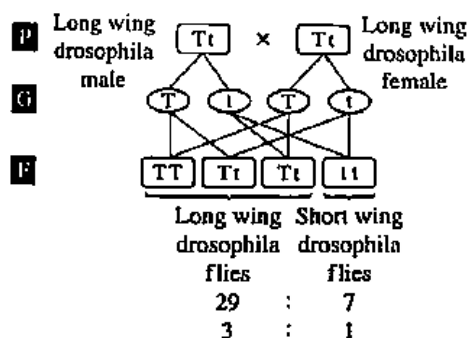


7

- Oxidizing agent is CuO because it loses oxygen and reduced to copper.
- Reducing agent is H₂ because it gains oxygen and oxidized to water.

8

Because of the ratio (29 : 7) means (3 : 1) so parents must be hybrid long wing.

**9**

1. Nitrogen pentoxide (N₂O₅).
2. Oxygen (O₂).
3. Nitrogen dioxide (NO₂).

10

$$R = \frac{V_1}{I_1} = \frac{6}{0.5} = 12 \text{ ohm.}$$

$$I_2 = \frac{V_2}{R} = \frac{12}{12} = 1 \text{ ampere.}$$

11

1. White precipitate.
2. Sulphur trioxide.
3. $\text{NaCl} + \text{AgNO}_3 \longrightarrow \text{NaNO}_3 + \text{AgCl} \downarrow$

12

$$q = \frac{W}{V} = \frac{240}{40} = 6 \text{ coulomb}$$

$$I = \frac{q}{t} = \frac{6}{2} = 3 \text{ ampere}$$

13

- (1) Tt (2) t (3) Tt

14

1. The reading of voltmeter = $2 + 2 + 2 = 6$ volt.
2. The reading of ammeter = $\frac{V}{R} = \frac{6}{3} = 2$ ampere

15

1. First :

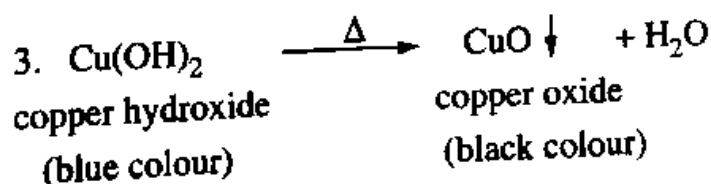
- (1) Thermal decomposition reaction.
- (2) Simple substitution reaction.
- (3) Oxidation and reduction reaction.

Second :

- (4) CuO (copper oxide).
- (5) H₂ (Hydrogen gas).
- (6) Cu (copper).

16

- 1. Sodium sulphate (Na₂SO₄).
- 2. By the disappearance rate of blue copper sulphate solution, or the appearance rate of blue copper hydroxide precipitate.

**17**

- 1. 3 N₂
- 2. (1) Nitrogen gas (3N₂)
- (2) Sodium (2N₂)
- (3) Sodium azid (2 Na N₃)
- 3. It is one of the most important safety means of car, where it inflated by nitrogen gas at an extreme speed on the occurrence of car accident.

18

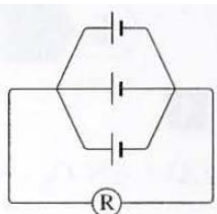
Figure (c).

19

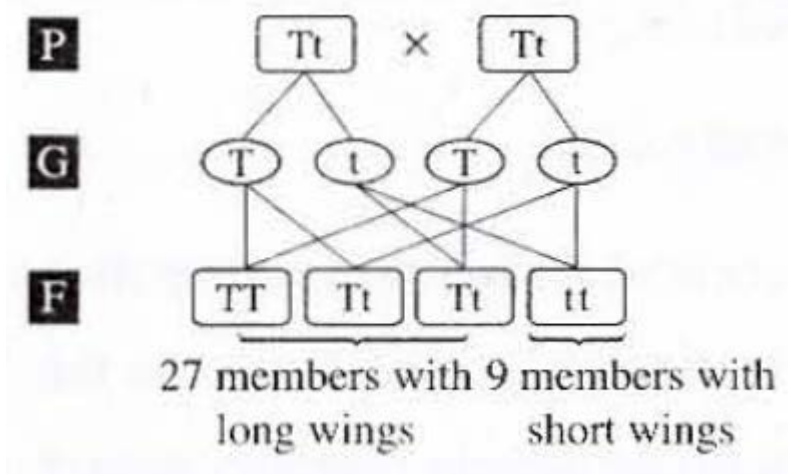
$$R = \frac{V}{I}$$

$$V = R \times I = 4 \times 1.5$$

$$= 6 \text{ volt}$$



20

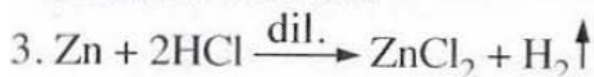


21

1. Simple substitution reaction

[A metal substitutes the hydrogen of acid]

2. The effect of surface area on the speed of a chemical reaction.



22

$$1. E_{\text{(battery)}} = 1.5 \times 3 + 1.5 = 6 \text{ volt.}$$

$$2. I = \frac{V}{R} = \frac{6}{3} = 2 \text{ ampere}$$

23

$$q = I \times t = 2 \times 5 \times 60 = 600 \text{ coulomb}$$

$$\text{work done (W)} = V \times q = 2 \times 600 = 1200 \text{ joule}$$

24

1. Rr 2. Rr - rr

3. Yes, because the dominant trait appear in individuals of first generation at a ratio of 100% and in the second generation at a ratio of 3 (dominant trait) : 1 (recessive trait).

25

1. D. b

2. A. c

3. B. d

26**First :**

1. ① The gene.

② DNA

③ The chromosome.

2. Nucleotides.

3. DNA binds with protein.

Second :

• It is easy to be planted and it grows fast.

• Its life cycle is short.

27

(1) Tt

(2) tt

28

$$1. I = \frac{q}{t} = \frac{20}{40} = 0.5 \text{ ampere}$$

$$2. V = 1.5 \text{ volt}$$

$$3. R = \frac{V}{I} = \frac{1.5}{0.5} = 3 \text{ ohm}$$